1,1,2,2-TETRACHLOROETHANE
CAS # 79-34-5

Agency for Toxic Substances and Disease Registry ToxFAQs **September 1997**

This fact sheet answers the most frequently asked health questions (FAQs) about 1,1,2,2-tetrachloroethane. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: 1,1,2,2-Tetrachloroethane is a manufactured chemical that is no longer used much in the United States. Breathing high levels of 1,1,2,2-tetrachloroethane can cause fatigue, vomiting, dizziness, and possibly unconsciousness. Breathing, drinking, or touching it for a long period of time can cause liver damage, stomachaches, or dizziness. 1,1,2,2-Tetrachloroethane has been found in at least 273 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is 1,1,2,2-tetrachloroethane?

(Pronounced tĕt′ rə-klôr′ ō-ĕth′ān′)

1,1,2,2-Tetrachloroethane is a manufactured, colorless chemical that does not burn easily. It is volatile and has a sweet odor.

In the past, it was used in large amounts to produce other chemicals and as a solvent, to clean and degrease metals, and in paints and pesticides. Commercial production of 1,1,2,2-tetrachloroethane for these uses has stopped in the United States. It presently is used only as a chemical intermediate in the production of other chemicals.

What happens to 1,1,2,2-tetrachloroethane when it enters the environment?

- 1,1,2,2-Tetrachloroethane eventually moves into the air or ground water.
- It does not attach to soil particles when released to land.
- When released to surface water, much of it will evaporate to the air while the rest may break down in the water.
- Breakdown of the chemical is slow; it takes about 13 months for half of the chemical to disappear in ground water and 2 months in air.
- 1,1,2,2-Tetrachloroethane does not build up significantly in the bodies of fish or other organisms.

How might I be exposed to 1,1,2,2-tetrachloroethane?

- 1,1,2,2-Tetrachloroethane can be found at low levels in both indoor and outdoor air.
- It has rarely been found in public drinking water supplies, although in a few instances it has been found in private well water that may have been used for drinking.
- It has not been reported in food or soil.
- Since production of the chemical has stopped, most workers would not be exposed to it.
- Limited exposure could occur from breathing in vapors or touching it due to spills or accidents in the workplace.

How can 1,1,2,2-tetrachloroethane affect my health?

Breathing high levels of 1,1,2,2-tetrachloroethane in a closed room can cause fatigue, vomiting, dizziness, and possibly unconsciousness. However, most people recover from these effects once they are in fresh air. Breathing, drinking, or touching 1,1,2,2-tetrachloroethane can cause liver damage, stomach-

aches, or dizziness if you are exposed to large amounts for a long period of time.

The health effects from long-term (365 days or longer) exposure to low levels of 1,1,2,2-tetrachloroethane are not known. It is also not known whether 1,1,2,2-tetrachloroethane will cause reproductive effects in people.

How likely is 1,1,2,2-tetrachloroethane to cause cancer?

It is not known whether 1,1,2,2-tetrachloroethane causes cancer in people. In a long-term study, 1,1,2,2-tetrachloroethane caused an increase in liver tumors in mice, but not in rats.

The International Agency for Research on Cancer (IARC) has determined that 1,1,2,2-tetrachloroethane cannot be classified as to its ability to cause cancer in humans, while the EPA has determined that it is a possible human carcinogen.

Is there a medical test to show whether I've been exposed to 1,1,2,2-tetrachloroethane?

There are no medical tests to determine if you have been exposed to 1,1,2,2-tetrachloroethane. The symptoms of 1,1,2,2-tetrachloroethane poisoning, such as stomachaches, fatigue, and dizziness are common to many diseases and are not useful to determine if you were exposed to this chemical.

1,1,2,2-Tetrachloroethane can affect the liver and there are medical tests to determine whether the liver is working properly. However, liver disease may have many causes and does not only indicate exposure to 1,1,2,2-tetrachloroethane.

Has the federal government made recommendations to protect human health?

The EPA requires that spills or accidental releases into the environment of 100 pounds or more of 1,1,2,2-tetrachloroethane be reported to the EPA.

The Occupational Safety and Health Administration (OSHA) has set a permissible exposure limit of 5 parts of 1,1,2,2-tetrachloroethane per million parts of air (5 ppm) in the workplace during an 8-hour workday, 40-hour workweek.

The National Institute for Occupational Safety and Health (NIOSH) recommends a maximum level of 1 ppm 1,1,2,2-tetrachloroethane for a 10-hour workday, 40-hour workweek.

The American Conference of Governmental Industrial Hygienists (ACGIH) recommends an exposure limit of 6.9 milligrams of 1,1,2,2-tetrachloroethane per cubic meter of air (6.9 mg/m^3) for an 8-hour workday, 40-hour workweek.

Glossary

Carcinogen: A substance with the ability to cause cancer.

CAS: Chemical Abstracts Service.

Ingest: To eat or drink something.

Milligram (mg): One thousandth of a gram.

Pesticide: A substance that kills pests.

Solvent: A chemical that can dissolve other substances.

Tumor: An abnormal mass of tissue.

Volatile: Easily changes into a vapor or a gas.

Source of Information

This ToxFAQs information is taken from the 1996 Toxicological Profile for 1,1,2,2-Tetrachloroethane produced by the Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services, Public Health Service in Atlanta, GA.

Animal testing is sometimes necessary to find out how toxic substances might harm people and how to treat people who have been exposed. Laws today protect the welfare of research animals and scientists must follow strict guidelines.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 404-639-6359. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.